

# IN-SITU DETECTION OF THIN-METAL INTERFACE USING HIGH RESOLUTION SPECTRAL ANALYSIS OF OPTICAL INTERFERENCE

5

## ABSTRACT OF THE DISCLOSURE

An invention is provided for detecting an endpoint during a chemical mechanical polishing (CMP) process. A reflected spectrum data sample is received that comprises a plurality of values corresponding to a plurality of spectrums of light reflected from an illuminated portion of a surface of a wafer. The reflected spectrum data sample is decomposed into noise sub-space values and signal sub-space values, and the noise sub-space values are truncated. In addition, outside spectrum data is extrapolated using a linear combination of the values of the reflected spectrum data sample. In this manner, an endpoint can be determined based on optical interference occurring in the reflected spectrum data.